

PATHWAYS

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MAGIC BOXES

History is often regarded as a subject ignored and put away on the shelf. Questions like, "Ma'am why do we have history at all?" or "Isn't it something past and buried?" often confront us. A third voice gives an explanation. "That may be why the past is always referred to as the past which is buried!"

These revelations sent shivers down my spine. Would I be able to revive their interest in this subject? Should I let it lie buried as it was or should I bring it up with a magical touch. I decided on the latter.

Hey, presto! And a magic box was devised during the summer vacation. Students were busy preparing the magic box, instructions for which were spelled out accurately.

They were asked to fill a shoe box with a two inch layer of wet mud in which they could put a few objects of their choice, small objects which could be hidden under the layer of mud. This was the first layer. When this layer had dried up completely they were to repeat this process twice more. Now they had a box with three layers. The magic history box was ready.

The first day at school dawned and we could view the students carrying their boxes to school waiting for something to happen. Suspense and excitement filled the air. In the class the boxes were exchanged and the suspense rose even higher. The class was divided into

groups and with this the activity started with a bang.

The pupils could hardly believe it when I addressed them as archaeologists who would soon get busy with excavation. Now each group excavated the box given to them carefully. These archaeologists knew the importance of being extra careful while digging in the box. Precautions were taken to see that none of the clues hidden below were broken or destroyed during the excavation. This activity was interrupted by words like "Oh! there is a earring" "Just see that lovely piece of pottery".

The objects were carefully set aside and the students noted the layer in which these objects were found. The articles were then categorised into artifacts and natural objects.

Now we experienced something which we had never thought of. The eleven year olds, on their own, began to decipher which layer was the oldest, what happens to the natural things therein, and how time changes the appearance of some artifacts. At this point a great deal of reasoning took place, each one trying to comprehend facts in their own fashion.

It was now very clear to them how archaeologists could decipher the life style of people living during ancient times. They could guess

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Children's Drawings Are The Base For Modern Art

"See the hump of the cow—isn't it like an unborn baby?" Mani explains to his mother a painting, which was collectively drawn by the children.

"These are the legs I have drawn" Mallikarjuna explained to his father. The body and the head are not on those legs. Those are merged into the stomach of that huge cow.

This huge cow was collectively painted by the children. They sat on all sides of a 3×2 metre size chart! They had all drawn pictures of children standing, sitting and walking viewed from all directions. At the end, two young British artists, who visited the school during Shankranthi, Mr. Luis Cook and Mr. Daniel Saul, joined all these children's pictures together and gave the whole composition an outline. Then it looked like a huge cow! . . . One child's hand became the tail! One of the children who sat with raised hands, formed the horns! In the head portion a child is sleeping with folded body! One child's head became the hump of the cow! One standing child's legs became the rear legs of the cow which were drawn by Mallikarjuna! Another's hands became forelimbs! And one's fingers became the udder! . . . Like that in this big painting of the cow we saw children standing, sitting and sleeping! It was a collective effort!

There were other paintings too—children taking a bath on Bhogi day; girls decorating the front yards of the houses with rangolies; men with decorated oxen; beggars; men decorating the horns of the bulls; white-washing houses; preparing sweets; Gobbi dance; giving milk porridge to crows; cock-races; cooking milk porridge; worshipping the cattle . . . etc., Paintings drawn by the children were exhibited in the school, after the project was completed! Parents were invited to see the paintings and children explained their works to their parents. "More than 30 art pieces surprised the parents!"

In daily assembly classes children were singing Shankranthi songs; songs; reading poetry; telling stories; acting and playing out dramas. During academic classes, the teaching was concentrated around Shankranthi. In Telugu and English language classes children were writing poems and essays. In science classes children were learning about planets, zodiac signs etc. In maths classes they solved problems based on Shankranthi activities . . . Every where there was an atmosphere of Shankranthi!!

In this atmosphere the children worked hard for a week to produce marvellous art pieces—around Shankranthi! They did not imitate famous artists or copy from others. Neither the visiting British artists nor the school teachers helped them to draw pictures, mix colours . . . no instructions, no suggestions were given to the children!

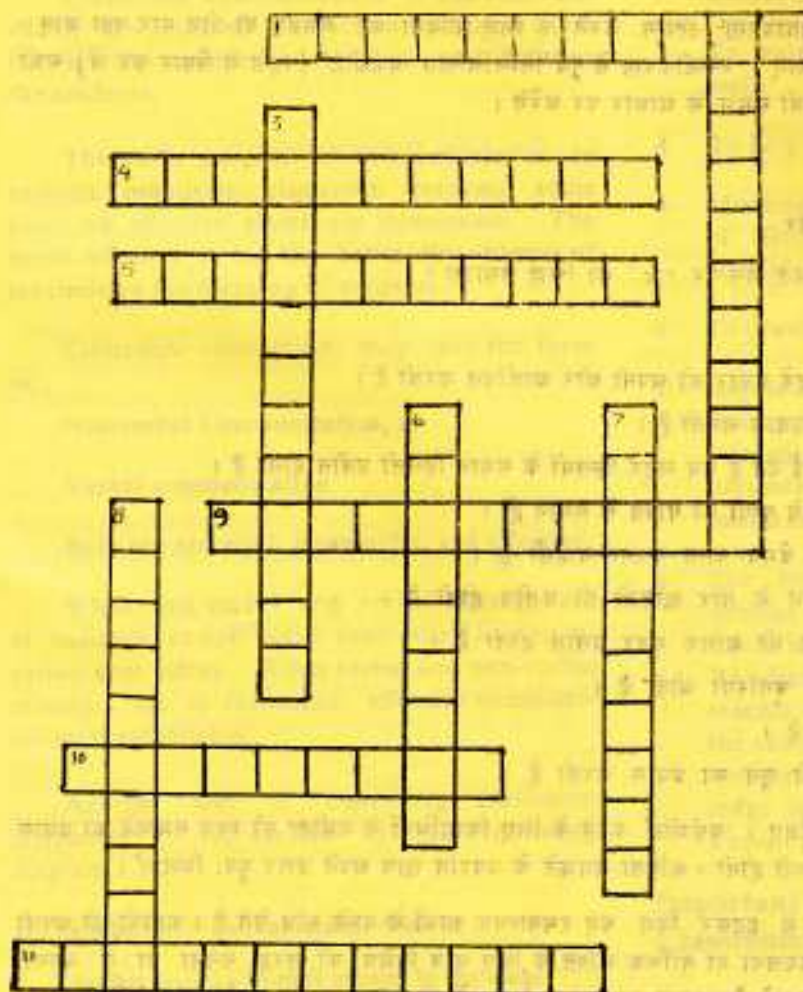
Every child is an artist in himself! Everybody drew the painting from their own imagination. They drew whatever they liked in their own style.

A few painted by leaping on to the chart. A few lay on their stomachs and painted. A few sat with crossed legs and painted very patiently. A few children like Ramesh Prabhakar had the paint on their faces or on their legs. A few got the paint on their shirts and bodies. Children like Abdulla and Narayana daubed the paint on the neighbouring children and laughed! Children formed teams and started to paint. Vijaya, by nature, was an artist. She did not allow Sudhir to join her; she really was afraid that Sudhir may spoil her work; so she sat alone. Every child had a limited space to paint. The given space was not sufficient for Hemalatha, so, she encroached into the others' space—the neighbouring artist Mallikarjuna objected to this invasion by her.

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'GRAPHY' CROSSWORD

by Lalit Kishore



CLUES

All the words in this crossword end with the suffix "graphy" referring to the systematic knowledge related to . . .

Across

1. sound
4. X-rays
5. handwriting
9. maps
10. mountains
11. codes

Down

2. water
3. books
6. earth
7. localities
8. printing

How many other "graphy" words do you know? Answers are on page 14.

All the four great communities of the world, under the aegis of the four great religions: Hindu, Buddhist, Muslim and Christian, are here together. It is as though Providence has opened a vast laboratory on Indian soil for the purpose of a massive social fusion.

कविता—कुछ नवीनता

हिन्दी कविता ग्रन्थापन में नवीनता लाने के लिए शिक्षण-विधि में थोड़ा सा परिवर्तन ही पर्याप्त है। परिचाटी से हटकर इसी प्रकार के एक प्रयोग में बच्चों का विशेष उत्साह देखने को मिला। यह विधि किसी भी कविता के लिए उपयुक्त हो सकती है, यहाँ उदाहरण के लिए 'सागर-लहरें' (किशोर भारती-3) को लिया जा रहा है।

सर्वप्रथम कक्षा में काव्यमय वातावरण उत्पन्न करने के लिए कविता को लयबद्ध दो-तीन बार पढ़ा जाए। तत्पश्चात् मौन पठन का समय दिया जाए। स्पष्टीकरण से पूर्व निम्नलिखित 'वर्कशीट' (पहले से तैयार कर लें) सभी विद्यार्थियों को करने के लिए दें। वे इसे अपनी समझ के आधार पर करेंगे।

'वर्कशीट'

नीचे दिए गए वाक्यों को पढ़िए और—

- I. जो श्रव्य कविता से संबंधित नहीं हो सकते, उन पर 'X' का चिह्न लगाइए।
- II. कविता के अनुसार क्रमबद्ध कीजिए।

1. सागर के हृदय पर नृत्य करती हुई लहरें संसार को अपनी ओर आकर्षित करती हैं।
2. उठती-गिरती कभी प्रसन्न और कभी उदास लगती है।
3. शाम को जब सेकड़ों इन्द्रधनुष दिखाई देते हैं तब लहरें पल्लवों के समान हिलती प्रतीत होती हैं।
4. सूर्योदय के समय ऐसा लगता है कि जैसे पुष्पों की पंक्ति के समान हों।
5. रात में हथेली फेलाकर आकाश का वैभव प्राप्त करना चाहती है।
6. सुबह के समय ताजी हवा में उल्लास के तीर छोड़ती सी प्रतीत होती है।
7. संध्या के समय सैकड़ों इन्द्रधनुषों से भी अधिक सुंदर प्रतीत होती है।
8. बौदनी रात में लगता है कि नीली बुनरिया थोड़ी है।
9. समुद्र में ही उनका जीवन/अस्तित्व है।
10. प्रातः बयार से अधीर होकर तट को छूने का प्रयास करती है।

अब कविता का स्पष्टीकरण कीजिए। 'वर्कशीट' करने के लिए विद्यार्थियों ने कविता को स्वयं समझने का प्रयास किया है अतः स्पष्टीकरण के समय थकड़ अच्छी होगी। कविता समझने के उपरांत छात्र अपने उत्तर पुनः मिलाएँ।

कहानी ग्रन्थापन में भी लोक से हटकर किए गए रचनात्मक कार्यों में बच्चे रुचि लेते हैं। कहानियों को अपनी कल्पना शक्ति के आधार पर आगे बढ़ाना, बदलना या ताकिक शक्ति के लिए पात्र विशेष की तरह बनना या न बनना, कहानी क्यों अच्छी लगी आदि प्रायः हम करवाते हैं; परन्तु इस प्रकार के प्रश्नों को कम समय देकर मौखिक रूप से करवाया जा सकता है। कहानियों के किसी भी पहलू को लेकर कक्षा में वाद-विवाद का आयोजन किया जा सकता है।

कहानी का एकांकी में रूपांतरण करवाते हैं, पर उसे थोड़ा बदल लीजिए—संवाद लिखने नहीं। कक्षा के कुछ विद्यार्थी कहानी पात्र विशेष बनकर अपने संवादों द्वारा कहानी को आगे बढ़ाएं। इसमें चाहें तो कठपुतलियों के माध्यम से भी संवाद प्रस्तुत किए जा सकते हैं।

अनुराधा

सरदार पटेल विद्यालय

नई देहली-110 003

CLASSROOM COMMUNICATION

by Jose Paul

What is Classroom Communication?

Classroom communication is the sum total of all the units of interaction that takes place between the teacher and students and between the students.

The main purpose of this article is to provide practising classroom teachers some hints on effective classroom interaction. The more effective it is, the better the chances of maximising the learning of students.

Classroom interactions may take the form of :

Non-verbal Communication, or

Verbal communication

Both are essential, meaningful, and effective.

When non-verbal and verbal messages are at variance or contradict each other, communication goes astray. When verbal and non-verbal messages are in resonance, effective communication is established.

Another way of classifying classroom interaction is represented by the following diagram:

1. Teacher $\longleftrightarrow$ Individual student
2. Teacher $\longleftrightarrow$ Small groups in the class
3. Teacher $\longleftrightarrow$ Whole class
4. Students $\longleftrightarrow$ Students

Some of the important functions of classroom communication are :

1. To create a positive emotional climate in the classroom conducive to achievement in learning.

2. To keep the students mentally active and alert, focussed on the topic being taught throughout the lesson.
3. To help the students understand the topic well.
4. To help them retain what has been learnt.
5. Monitoring of student learning and receiving of feedback from the students about the effectiveness of the teaching.
6. To provide feedback to the students.
7. Adjusting the teaching depending upon the feedback received. This may be through reteaching or clarifying the concepts presented by the teacher or correcting mistakes made by the students.
8. The type of classroom communication decides the mental level at which the child's mind is engaged in the learning process. By adjusting the style of communication the teacher can consciously keep the mind of the children at the desired level of mental complexity from mere acquisition of knowledge to synthesis and evaluation (Bloom's Taxonomy).

Important Occasions For Effective Classroom Interaction.

The opportunities for interactions in teaching-learning situations are :

1. While providing information which should be
 - a) Carefully selected and relevant to the objective.
 - b) Logically organised.
 - c) Clearly presented.

2. While responding to the students' questions and actions and students' response to the teacher's actions.

3. Engaging the students in activities.

4. Asking questions — convergent and divergent ones.

The building up of an emotional climate conducive to learning is a necessary preliminary to all classroom teaching. Some people, especially young people, say, "I am worthless". What they mean is "Please prove to me that I am worth something".

Hundreds of children pass through our hands without themselves fully realising their potential. We, their teachers, often do not discover them, nor do we help them to discover themselves. There is much that teachers can do, consciously and deliberately to improve the situation.

Listening

Listening is one of the most powerful tools in classroom communication. Conscious effort on the part of the teacher to listen to the student and the ability to read between the lines will help the teacher to understand the personality of the child, the level of learning that has taken place in quantitative and qualitative levels. How much learning has occurred and how deep it is may be revealed if the teacher is willing to listen. Listening is an art which can and should be mastered by a teacher. If a teacher is willing to listen, the students too will learn to listen.

Verbal and Non-Verbal forms of Non-Listening Behaviours.

1. Giving non-verbal messages of disinterest in the communication, by actions such as

- * looking away
- * attempting to do some other work while apparently listening (like correction of books etc.)

* Yawning, fidgeting, looking at your watch or otherwise demonstrating lack of interest

2. Interrupting the communication

Student : I was trying to complete the report and . . .

Teacher : I have no time to listen to excuses.

3. The "Me Too" syndrome

Student : *I was so nervous* about my maths work that I could not sleep last night.

Teacher : You think you were nervous. You should have realised *how nervous I was* about your results in maths.

The student is not interested in listening to the teacher's feelings when he/she is concerned about his/her own; they expect your empathy.

4. Instant advice (without discussion)

Student : I doubt whether I will be able to do well in the exam.

Teacher : You have wasted enough time playing around. At least utilise the remaining time to work hard.

Advice is to be given only when solicited. Free advice is not easily accepted.

Non-Verbal and Verbal Forms of Listening Behaviours.

1. Focussing :

Show the person who is speaking that he/she is the centre of your attention. Maintain eye contact with the speaker. Do not interrupt or tell your own stories. Do not give your opinions unless asked for.

2. Accepting :

Accept the communication with an open mind. Give verbal and non-verbal clues of accepting. Even if you don't agree, listen with interest and patience.

3. Draw Out the Student :

Give helpful hints to continue the conversation. Ask :

"Then what happened?"

"How did it happen?"

"It seems that you really enjoyed it!"

"What were the difficulties you felt?"

"What else did you try?"

"That was great! Let me hear more about it."

and so on . . .

The following two stories highlight the two kinds of teachers that students often meet.

The Value of Zero

My arithmetic teacher was crammed with knowledge but he managed to make me feel ignorant. He was extremely erudite but his tongue was a sword. He was a virtuoso of the verbal slap. In his class, we knew how it felt to be zero.

Golden Tongue

Mr. Kumar was our favourite teacher, and we were his favourite class. He confessed that he never had a "collection" quite like us. His English hour was the best part of our day. Mr. Kumar had two outstanding qualities: genuine warmth and a golden tongue. He brought to life the heroes of history and the lions of literature. In his presence we talked fluently. No one stammered in class. We spoke our minds boldly. Some teachers made us feel guilty and evil when we revealed our

thoughts. Not Mr. King. The affection in his eyes gave assurance and dissolved fear. He provided us with incandescent moments that I still treasure.

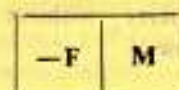
Encouraging & Criticising

These are two teacher behaviours that are important to create an effective classroom climate. There are a few common rules that apply to both these behaviours. Both of them provide feedback to the student about their actions, good or bad.

Any communication of this type has two aspects—your feelings and the substance of your communication. Your feelings are shown by your non-verbal expressions. For example, if you have to tell a child, "I asked you to complete the homework in time and you have not done it", you could express it with *negative feelings of anger*, as a matter of fact or with feelings of *love and concern*. When the communication is in an angry tone, the student becomes aware of your anger and forgets the essential part of the message. A change in the child's behaviour arises out of fear; it aims to avoid your anger. This change in behaviour, will last only while you are present. It is more than likely that the old behaviour will come back again when you no longer teach that student. The same message communicated without any feeling, in a matter-of-fact way does not touch the child's feelings, and the child may not try to change his/her behaviour. When you express the same with positive feelings, showing concern about the behaviour, the child will recognise the feelings and also the substance of your message. Both will be remembered, and he/she will try to change the behaviour.

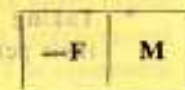
In short

Sender



Reprimand

Receiver



discarded



Reprimand

Both accepted

—F : negative feeling

+F : positive feeling

M : Message

Principles of Encouragement (Praise) and Reprimand

1. Never encourage (praise) a child, rather talk of the satisfactory work or behaviour.

Personal statements such as these

- * You are a poet.
- * You are an artist.
- * You are honest.

are not always conducive to better achievements. Instead say :

- * I like the poetry you composed.
- * I like the picture you painted.
- * I like you because you said the truth.

Never reprimand a child for his personality traits using statements like these ;

- * You are lazy.
- * You are clumsy.
- * You are a cheat.
- * You are a liar.

Instead state clearly the behaviour you do not like. Try :

- * I want the work to be done in time.
- * I don't like clumsy work.
- * I dislike cheating in exams.
- * We expect everyone to tell the truth.
- * Taking somebody's property without their permission is not allowed.

Your communication must indicate that what you don't like is the action or be-

haviour of the child. In other words: "I like you but not your particular behaviour or action".

2. Be specific in giving praise or in reprimanding your students.

If a child has composed a poem, essay or completed any other work, do not simply give remarks such as good, fair, excellent, satisfactory etc. These are general statements which usually do not help the child to rise to greater heights in his work.

Instead try :

- * Your imagination is good.
- * Your description is good.
- * Your vocabulary is good.
- * The rhythm in your poem is excellent.
- * The narration is very effective.
- * The sequence is well drawn out.
- * The colour combination is excellent.
- * The composition of the picture is good.
- * The expressions of the people in the picture are very revealing.

Likewise being specific in comments helps the child to understand his strengths and weaknesses and build further. Your comments may be critical, but not hurtful.

- * Your handwriting needs to be improved.
- * Your spellings need attention.
- * Your colouring of the picture needs more careful work.
- * Take care of your grammar mistakes.

In other words, be descriptive about the action or behaviour you are praising or reprimanding. Descriptive sentences as above are more effective than single words.

Classroom Techniques

The usual classroom is characterised by teacher talk as the main form of interaction. Usually the one who talks the most on anything learns more about the topic under discussion. So who learns more in class? the teacher or the student? Think about it.

This one-way communication between teacher and students makes them passive listeners, tending to inattentiveness. Their learning level will be at the lowest ebb.

At times it may be necessary to use this method due owing to time constraints, difficulty or logical sequence of the topic. Then make sure that you present the matter in as interesting a fashion as possible. Use vivid explanations, novel approaches or audio-visual presentations to capture the attention of the students. These interactions must be for short stretches at a time, interspersed with multilevel interactions.

In order to keep the whole group attentive, the teacher usually asks questions. A few individual students answer, while the rest may switch off. This is little better than one-way communication.

The teachers' purpose is to engage every child in the learning process throughout the lesson. Try a slight change in your techniques. First make it clear to the students that after every small bit of new material, questions will be asked on it. Instruct the class to listen to the questions carefully and warn that any child will be asked to answer at random.

After asking the question, give "Wait Time" for all of them to formulate the answers in their minds. Then randomly pick on one child to answer. When the child has finished answering, give sufficient time for him/her to add to or re-affirm the answer. After the answer is completed, the whole class must show a non-verbal signal indicating whether the answer is correct or not. The non-verbal sign could be "Thumbs Up" for right answer, "Thumbs

Down" for wrong answer, "Thumbs Sideways" for a partially correct answer.

This process will keep the whole class actively engaged in the learning process. Moreover you get an immediate opportunity to monitor the learning of the whole class.

Other non-verbal indicators for the class to use could be True-False or Yea-No cards. Such a process will easily help you find out who hasn't "understood", pointing the way to repetition or remedial teaching.

Multi-level interaction can take place in a classroom. The teacher presents an idea or topic. Questions, suggestions, feelings, opinions, new ideas are asked for from the class. Every child has the freedom to interact with the teacher's ideas. This is an effective method by which the majority of the class can be engaged in discussion on the topic. It is good, when the teacher is trying to verify the previous knowledge, to develop a topic, to summarise what has been learnt etc.

Cooperative Learning Techniques can be tried out. The students are divided into small groups (pairs, trios, fours, fives or six). The teacher presents the learning material along with the questions. The teacher warns that he will ask any one in the group to answer questions. If a child does not answer correctly, the members of the group are responsible for the wrong answer. If the child answers correctly, the credit is for the group. This forces the group to take collective responsibility for the answer given by any member. So the group makes sure that every member learns the correct answer. Every member has to be individually responsible for the group's performance.

There is a great difference between competitive learning and cooperative learning. Cooperative learning strategies have been found create self-confidence and helpful interpersonal relationships in the classroom. The classroom will have a very positive emotional and learning climate.

More details on co-operative learning strategies are beyond the scope of this article, but interested readers might recall an article on the subject by Bina Malhotra which appeared in our issue of August 1988.

One Teacher on his Feet is Worth Ten on their Seats:

An active teacher, who is on the move among the students in the classroom, at least when independent study or group work is going on, helps students achieve more. This "Teacher Trail" is especially necessary when the teacher is providing guided practice when learning is fresh. It keeps the students active, gives the teacher a chance to monitor the learning of individual students and groups. The teacher will get a chance to help those who are in trouble while the others are busy with their own work. This is a skill which the teacher must consciously make a part of his teaching strategy.

Within this short article, I have tried to share with readers many ways in which they could become effective classroom communicators, helping to maximise the learning of their students—and nothing could give a teacher greater pleasure! However each of these useful techniques needs to be *consciously practised*. Teaching is an art as well as a skill, and all skills need constant practice. A few suggestions may help.

- Select one of the ideas/skills that you wish to try out in class.
- Carefully plan its use in your class, over a short stretch of time. Often, fifteen minutes will do for a start.
- Rehearse what you are going to do/say in your class—even if it sounds silly to you, an experienced teacher. Remember, you are trying to change your teaching behaviour.
- See if you can ask a friend to sit in your class to monitor your "practice". He/She must provide you *only factual feedback* about how many times you actually practised or demonstrated your chosen skill. If you

feel happy about it, the two of you can monitor each other, and also discuss ways of becoming better practitioners of the art of teaching.

To close, I would like to share a small poem with you:

The Feelings of a Teacher

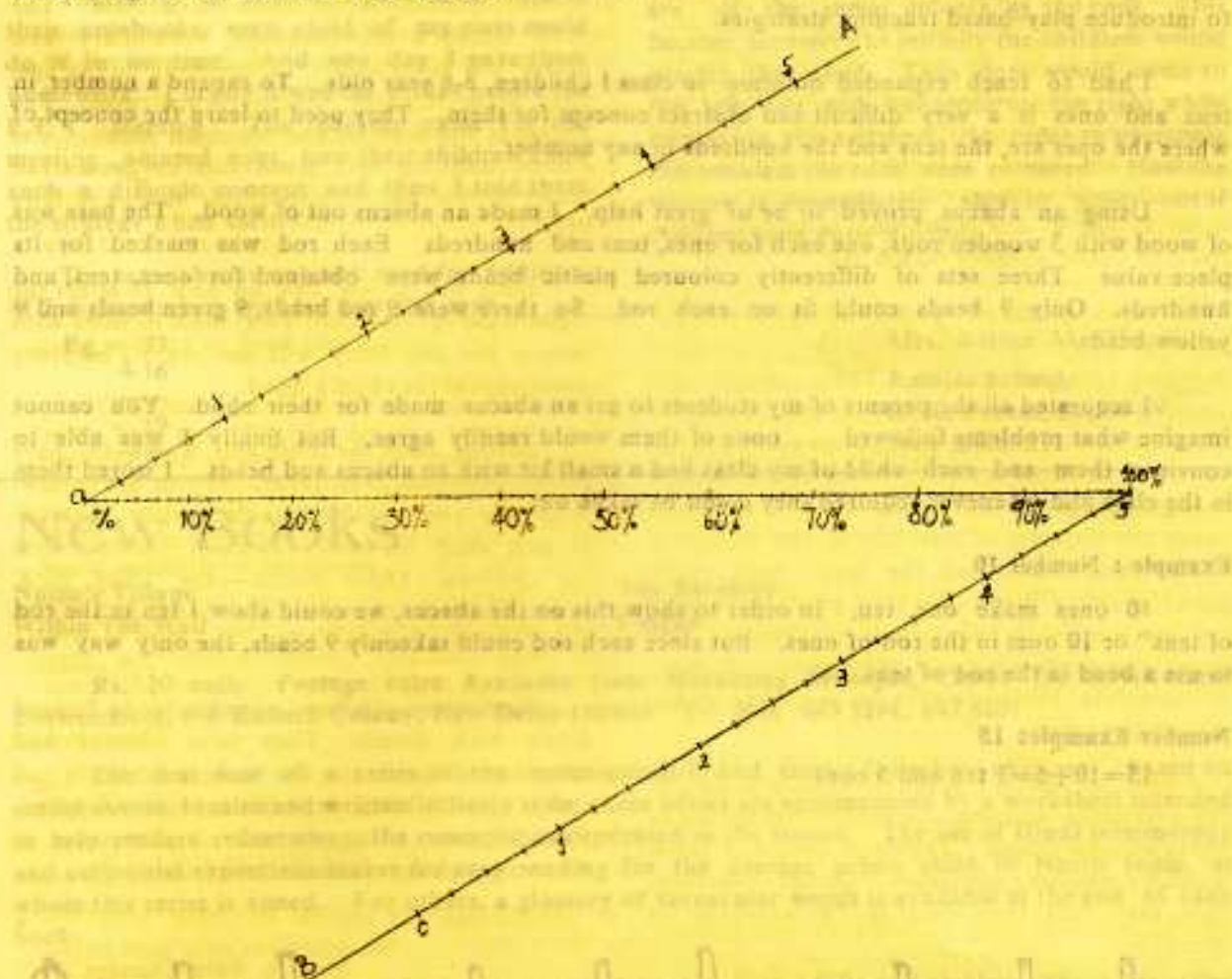
I have come to a frightening conclusion.
I am the decisive element in the classroom.
It is my personal approach that creates a climate.
It is my daily mood that makes the weather.
As a teacher, I possess tremendous power to make a Child's life miserable or joyous.
I can be a tool of torture or an instrument of inspiration.
I can humiliate or humour, hurt or heal.
In all situations it is my response that decides whether a crisis will be escalated or de-escalated and a child humanized or de-humanized.
In the next few decades there will be *new learning environments* and *new means of instruction*.
One function will always remain with teacher: to create the emotional climate for learning.
No machine, sophisticated as it may be, can do this job.

Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance.

All mankind are one great family of which numerous nations and tribes existing are only various branches. Therefore, the enlightened . . . wish to encourage and promote the reciprocal advantage and enjoyment of the whole human race.

A Simple Mathematics Activity

The picture below shows a simple ready reckoner by which fractions may be converted into percentages. The making of this provides students with practice in drawing accurate geometrical figures and provides a link between geometry and arithmetic. The process may then be extended to finding equivalents between fractions and decimals, as also between decimals and percentages. Let students figure out how this is to be done.



How to Convert Fractions into Percentages

The sheet shows three lines namely— (i) A horizontal scale 0 to 100% (ii) An inclined line from 0 of scale (say line A) (iii) An inclined line from 100 of scale (say line B)
(A & B are two parallel lines)

- Method—**
- Take equal lengths on line A from 0 to n (the denominator value), say 5, and mark them.
 - Take same lengths on line B from 100% point and mark in descending numbers 5, 4, 3, 2, 1.
 - The lines 1-1, 2-2, 3-3, 4-4 will intersect the percentage scale at fractions $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$, & $\frac{4}{5}$ respectively.
 - Check if you get 20%, 40%, 60%, and 80% respectively. Similarly all other fractions can be converted into percentages instantaneously.
 - The fraction scale on lines A and B are to be taken as per the denominator of the required fraction

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THE ABACUS

Whenever we observe children, we notice they are always learning new things even while playing. So, why not teach them also through play? Classes I & II are the formative years for acquiring basic concepts in all the subjects—Mathematics, Hindi, & English and this is the best stage to introduce play-based teaching strategies.

I had to teach expanded notation to class I children, 5-6 year olds. To expand a number in tens and ones is a very difficult and abstract concept for them. They need to learn the concept of where the ones are, the tens and the hundreds in any number.

Using an abacus proved to be of great help. I made an abacus out of wood. The base was of wood with 3 wooden rods, one each for ones, tens and hundreds. Each rod was marked for its place value. Three sets of differently coloured plastic beads were obtained for ones, tens, and hundreds. Only 9 beads could fit on each rod. So there were 9 red beads, 9 green beads and 9 yellow beads.

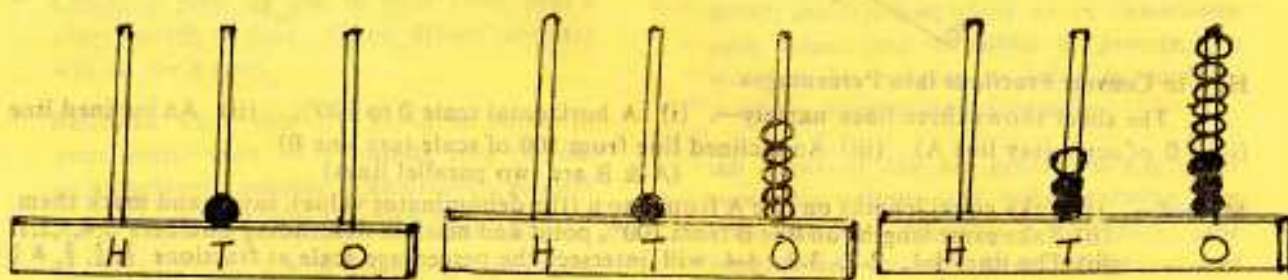
I requested all the parents of my students to get an abacus made for their child. You cannot imagine what problems followed... none of them would readily agree. But finally I was able to convince them and each child of my class had a small kit with an abacus and beads. I stored them in the class and whenever required they could be taken out.

Example : Number 10

10 ones make one ten. In order to show this on the abacus, we could show 1 ten in the rod of tens or 10 ones in the rod of ones. But since each rod could take only 9 beads, the only way was to use a bead in the rod of tens.

Number Example: 15

$$15 = 10 + 5 = 1 \text{ ten and } 5 \text{ ones}$$



Using the abacus, the concept of expanding a number was made so clear that before I could finish writing a number each child would display it on his/her abacus. I did this expansion orally and practically for a week. And then they were thorough.

Thereafter, as soon as I gave them work in their notebooks, each child of my class could do it in no time. And one day I gave them homework. Luckily it was the Friday before the P.T.A. meeting. The parents came for the meeting, amazed over how their children knew such a difficult concept and then I told them the strategy I had used.

The same abacus was also used for addition of 2 digit numbers without carrying over.

$$\begin{array}{r} \text{Eg. } 23 \\ + 16 \\ \hline 39 \\ \hline \end{array}$$

Different coloured beads were used for each of the numbers as displayed in the third figure

This year also, the use of this aid is being continued. It was further improved by colouring the rods with 3 different colours. The beads are of the same colours as the rods. This became necessary as initially the children would reverse the stand. Thus ones would come to the left side and hundreds on the right while displaying the numbers. In order to overcome this problem the rods were coloured. Now the teacher is immediately able to point out if children have done it wrong.

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New Books

Naina's Village
Within The Well

The Raindrop
Chipko

Rs. 20 each. Postage extra. Available from Marketing Manager, Centre for Science and Environment, F-6 Kailash Colony, New Delhi-110 045. Tel. Nos. 643 3394, 647 6401.

The first four of a series of ten environment-linked stories for school children. Based on actual events, locales and written in lively style, these books are accompanied by a worksheet intended to help readers reflect about the concepts incorporated in the stories. The use of Hindi terminology and colloquial expressions makes for easy reading for the average urban child in North India, at whom this series is aimed. For others, a glossary of vernacular words is available at the end of each book.

The characters of these stories are everyday people, both adults and children, whose life-styles been affected by environmental changes. Each story shows in its own way how when people get together as a community, they can overcome their problems. Another plus point is the interaction between city-bred children and their hard-working rural friends; a gentle reminder that life is not a bed of roses for children all over India.

These books would be good as prizes/gifts and should form a part of school libraries. Nature club members/activists should initiate a discussion on the concepts of each story, lest they be forgotten after a quick read-through. Some of the work-sheet ideas are splendid, suggesting ways in which children themselves can be conservationists; others will no doubt be re-worked in future editions after feedback from schools and children. One also hopes that the future books of this series will focus on similar areas of concern in other parts of India.

Once upon a time or

The Importance of Story Telling

I have been teaching for the past 23 long years—the same school the same class and the same age group. One would think I should be thoroughly bored by now. But this is not the case. By using varied teaching methods every year and by teaching each child as an individual I never got bored. On the contrary, I have enjoyed every moment of my time spent amongst these bright 4-year olds who helped keep the spirit of youth burning within me.

The environment in which children are brought up today only remotely resembles the environment in which I was brought up. Today, parents are unable to spend much time with their children. No doubt, the middle-class parent does manage to ensure his child is well clothed, fed and sent to a good school. But is this enough? Children spend the majority of their life in the company of servants, maids and the lucky ones, with grandparents. When they start going to school the teacher is an important influence. The parents' duty does not end with getting a child to complete his homework or switching on his favourite cartoon.

This is where I wish to actually highlight the relevance and importance of story telling in today's environment. The child does not learn much by watching television. On the contrary, they may ruin their eyes if TV watching is overdone.

Story telling helps the child in many ways. That half an hour spent the company of parents,

sitting close and listening to a loved voice instills immense confidence in a child. The child learns a lot—language, vocabulary and above all, good habits. Depending on the age, they learn to speak meaningful sentences. The parent is also training the child to listen. The art of listening will stand him in good stead when grown up, in education, as also in later life.

Here are a few tips on how to select the right kind of story. This must be done with care — just any story will not do. The story must appeal the child's mind.

Stories from the Bible and Ramayan have always appealed to children. If you are knowledgeable you can narrate the stories yourself. If not, shop for books rewritten in simple style for children. Other books — the 'Lady Bird' series, fairy tales, tales from the Panchatantra are recommended for young children.

Remember, children should not be bogged down with details. They have creative and imaginative minds so the story must begin and end 'with a bang' ie capture their attention. For 4-5 year olds, repetition is important so they can pick up vocabulary and language.

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Answers to the "Graphy" Crossword

Across : 1. Phonography, 4. Radiography, 5. Calligraphy, 9. Cartography, 10. Orography
11. Cryptography

Down : 2. Hydrography, 3. Bibliography, 6. Geography, 7. Topography, 8. Typography

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At last, the children produced wonderful and rare art pieces! There was no rule, no rhyme and no symmetry. Every object, every sound, every idea flowed fluently out of their imagination. Their skill was raw yet lovely.

Parents normally tend to think that children get spoiled if not checked and kept under vigil all the time and at every point. But they fail to understand that by doing so they are trespassing into the child's world, nipping in the bud their creativity, imagination and even self confidence! Naturally, children are creative! Education is a means to draw out their latent talents and help them to grow in stature, to equip themselves with latest knowledge.

Pablo Picasso said, "It has taken me a lifetime to learn to draw like a child"

Children's drawings are the base for modern art! The two British artists worked with children for a week to elicit creative paintings from them! They were tired after working three hours with them everyday. In contrast the children never got tired of painting! Louis burst out without hesitation . . .

"We are getting tired working three hours only with the children. You and your staff spend the whole day with children and you bear with their mischief and quarrels . . . don't you feel tired"

Teaching is not an occupation!

It too is a creative job!

How many of us get the opportunity to spend time with the children?

How many of us assist the children in their endeavour to reach the heights of creativity and all round development?

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(This article concludes a four part series on Shankarathi written by the author in the four 1993 issue of PATHWAYS.)

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with the help of the clues unearthed that these were the things used by people living during that period. They could even find out which inventions and discoveries had been made during that period.

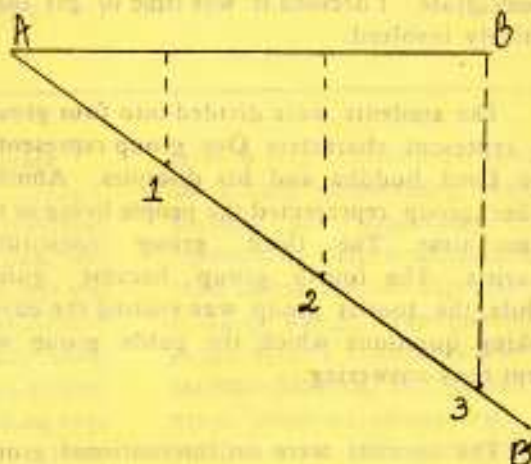
Our objectives had been fulfilled. History had been dug up from the magic box. It had not been left on the shelf with dates and events. It had actually been an experience, though on a much smaller scale, which is still cherished in everyone's memory.

Nothing could be more rewarding than students "Ma'am it was just like playing treasure hunt with clues hidden in all places and we were the hunters" or when another voice compared it to pieces of a jigsaw puzzle which when put together formed the entire picture.

So I smiled and thought "may be the magic box had lent its charm to our history lesson and would continue to do so in the future". It was a rewarding beginning.

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Before making the final drawing, it would help students to practice the process of drawing parallel lines, as also using these lines to divide a given line into n equal parts. Thus if a line AB is to be divided into three equal parts, the following method may be used. First draw a line AB' at an angle to AB . Mark off three equal lengths on AB' , starting from A . Join $3-B$. Through points 1 and 2 draw lines parallel to $3-B$. These lines will divide AB also into three equal parts.

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ACTIVE HISTORY

Negative attitudes towards history are more often than not due to the inability of students to conceptualise or visualise the places, characters and varied colours of a culture, which existed a long time ago. Social studies teachers have to constantly seek ways to prevent each lesson becoming a drudgery. When students become indifferent, the teacher too loses his/her motivation. However creative thinking and innovative methods can change all this into a very different ball game.

In one social studies period, the students of class IV were looking bored. Instead of listening to information on 'The Places of Historical Interest in India' with interest, they looked sleepy, lifeless and were not able to concentrate. I decided it was time to get them actively involved.

The students were divided into four groups to represent characters. One group represented the Lord Buddha and his disciples. Another other group represented the people living at the same time. The third group constituted tourists. The fourth group became guides while the tourist group was visiting the caves, asking questions which the guide group was kept busy answering.

The tourists were an international group. They were excited at the sight of the Ajanta caves.

Entering the caves, one tourist said, "There are many caves?"

Guide: 'Yes, thirty. These were cut out in the rocky hills of the Western Ghats'

A tourist: "Ah! what beautiful paintings on the wall! What do these depict?"

The guide: "These paintings on the walls are called murals. They tell us about Lord Buddha's life."

Another tourist: "How old are these murals?"

Guide: "Oh! these are 1500 years old."

Tourist: "Lovely! I can see Lord Buddha in Samadhi."

One guide took the party on to a big hall. Pausing, he explained: "This is a big hall of worship called 'Chaitya'."

Pointing to the remaining caves: "The remaining caves are known as *viharas* or rest-houses. From these caves we also get to know about the life of the people in those times. These beautiful paintings on the walls, pillars and roof of the caves are pieces of art that make the people wonder at the skill of the Indian people of ancient times".

In this way active participation was ensured. The lesson was learnt through question answer sessions between the tourists and guides. The students' level of understanding and assimilation of the lesson showed remarkable improvement.

Later, one of the students remarked: "It was a very enjoyable experience! can we try it again?"

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